



Can an Intense Educational Experience Improve Performance on Objective Tests? Results from One Charter School

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Abstract

This prospective, longitudinal study showed that an intense educational program significantly improved academic performance in underserved students who were selected solely for their desire to participate in the program and their parents' willingness to support them. Mean performance in six representative components of the Woodcock-Johnson Tests of Achievement-Revised improved at a rate that substantially exceeded one year for each year in the program. During three years of attendance, performance levels increased from below to more than two years above grade level.

There seems to be little disagreement that education for children in America's low-income neighborhoods—the so-called at-risk or underserved children—is a major, national problem (Jencks and Phillips 1998; Moses and Cobb 2001; Thernstrom and Thernstrom 2003). Debate rages over the most efficient approaches to solving this problem. An important issue is the extent to which providing better quality education in more intense academic programs, or the effective schools theory as defined by Bingham (1993), suffices. One reason for the continuing debate is the lack of available data. The lack of such data reflects the difficulty of carrying out prospective, controlled studies that compare educational programs. In the absence of such studies, this investigation presents data on the academic progress of students from an underserved urban environment who elected to participate in an intense educational program.

Within some municipal public school systems, a special charter may be created to form publicly supported schools that provide an educational experience different from the officially mandated one. There is a variety of purpose and quality among charter

schools. This study focused on one school that accepted students from underserved areas based solely on their commitment to an intense educational program (via a signed educational contract) and the willingness of their parents to support them in the program (Choi 2003). One important assumption in this study, which was supported by performance at the time of admission to the program, was that these self-selected students were of average academic capacity, though they may have come from families with a greater than average commitment to high educational standards.

This study examined whether prospective, longitudinal academic testing can demonstrate the effectiveness of an academically intense charter program. It was hypothesized that administering standardized academic achievement tests at the time of admission and again at the end of each academic year could be used to demonstrate an enhanced rate of academic advancement. A second hypothesis was that the demonstration of substantial academic gains would support the potential benefits of an effective school program (Bingham 1993) since no other recognized variable was contemplated. The serendipitous, first-time administration of a newly designed, statewide test of knowledge and skills provided independent corroboration of these prospectively obtained results.

Methods

Academic setting, student selection. The Knowledge Is Power Program (KIPP) was established in 1994 to provide enriched education to underserved upper elementary and middle school students from inner-city environments. The program solicited enrollment in areas of Houston that were characterized by a low-income, largely Hispanic population. Students' prior academic records were not considered. The two teachers who founded KIPP set up a table in front of a major supermarket in a largely Hispanic area of Houston to attract parents of children who were about to enter fifth grade to enroll their children in the program. Acceptance was based solely on the following conditions:

- Students committed to attending school for 9.5 hours each weekday and four hours most Saturdays during the school year, as well as for seven hours each weekday during a four-week summer session;
- Students agreed to fulfill faithfully all school assignments;
- Students pledged to "work, think, and behave" to the best of their ability; and
- Parents committed to the learning process by reinforcing attendance and completion of all school assignments and by supporting the school.

These terms were set forth in an educational contract entitled *Commitment to Excellence* that was signed by students and their parents. In 1995, KIPP Academy was approved as the first charter school in the Houston Independent School District (Choi 2003).

Teachers. Teachers were recruited from alumni of Teach for America, a national corps of college graduates who commit to teaching two years in under-resourced urban and rural public schools, and from other public and private schools. Teachers were selected based on their knowledge of the subject matter, passion for teaching, faith in the ability of all students to learn, high academic standards, and ability to communicate enthusiasm for the subject matter, regardless of whether or not they had obtained advanced degrees in education. Teachers were accepted only if they agreed

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to be available to their students by cell phone at all times. Most teachers did not know Spanish or had only a rudimentary understanding of the language.

Curriculum. KIPP Schools offer carefully planned and researched curricula and instruction. While each KIPP school leader can design his or her own curriculum, instruction at KIPP Schools must map to state requirements and meet high KIPP exit standards. For example, in mathematics, emphasis is placed on problem solving using words and situations relevant to students' daily experiences in addition to covering skills outlined in the state curricular guide. The curriculum becomes increasingly complex in the fifth and sixth grades when the concepts of algebra are introduced. By the end of eighth grade, students are to have a working knowledge of first-year algebra. At the same time, computation and number sense are stressed so that theoretical and practical skills develop in parallel. Reading focuses on fluency, vocabulary, and rigorous analysis of sentences, paragraphs, and entire stories so that students can extract essential meanings. Writing is regarded as essential. Nearly every day, time is set aside for writing, alternating between creative and analytical prose. Throughout the academic year, faculty members meet regularly to scrutinize carefully the curriculum for scope and sequence. Emphasis is placed on teaching in a logical order to facilitate the acquisition of knowledge in a cohesive progression. Faculty members also review the sequence in which tasks are mastered to maximize spiraling of skills.

For many KIPP students, English is a second language. Therefore, basic grammar is emphasized continually. To encourage critical thinking, classroom discussion is used extensively with strong pressure for participation from the students themselves. In every educational interaction, levels of expectation are high and a conscious effort is made to create a culture in which academic achievement has a preeminent place and is appropriately rewarded. For example, students can earn KIPP dollars, redeemable for school supplies, uniforms, musical instruments, and school trips based on behavior, how well they exhibit and have internalized the school's values, as well as academic performance. Paychecks provide students and parents with a real world means to measure student performance.

To succeed personally and academically, students require an uninterrupted, unified curriculum interwoven and reinforced by the activities and behaviors of all stakeholders, including parents, teachers, and community leaders. The curriculum is bolstered by a continuous extended day, week, and yearlong schedule for mentoring, tutoring, and extracurricular activities. Adults demonstrate a commitment to students' academic achievement that extends beyond the classroom. As noted previously, parents sign a *Commitment to Excellence* contract and KIPP teachers are available to parents and students 24 hours a day through cell phones. The educational experience is reinforced in other ways as well. Parent education programs are provided on a regular basis, and the level of attendance by parents is remarkably high.

Assessment of Student Performance

The cofounders of KIPP Academy intended for the benefits of participation in an intense educational experience to be measurable by objective testing. Accordingly, in Oc-

tober 1995, a battery of standardized tests (see list that follows) was administered to all fifth-grade students in the first class to matriculate at KIPP Academy (termed “entering fifth grade”) and again in May 1996, 1997, and 1998 (at the end of the fifth, sixth, and seventh grades, respectively). Beginning in September 1996, this process was repeated with the second matriculating class to validate that observable differences were due to the educational program rather than to any set of teachers. Every student was tested, with no exclusions for students with recognized special education needs.

Woodcock-Johnson Tests of Achievement-Revised. Six subtests from the Woodcock-Johnson Tests of Achievement-Revised (WJ-R) were selected. These included:

- calculation (arithmetic skills);
- applied problems (word problems that test mathematical reasoning);
- letter-word identification (reading single words correctly);
- passage comprehension (reading comprehension as assessed by ability to read short passages silently and understand them sufficiently to fill in missing words);
- dictation (single-word spelling from dictation); and
- writing samples (written expression, including description of line drawings and filling in missing sentences).

These tests were selected because they were standardized and widely administered. The tests broke down basic academic skills into components—calculation and mathematical reasoning, reading decoding and comprehension, and spelling and written expression. These skills are regarded as essential for academic success.

All six subtests were individually administered and scored by a single, experienced speech-language pathologist. At the end of the sixth and seventh grades, assistants who had undergone special training administered tests of arithmetic skills, spelling, and written expression to groups of students. Tests of mathematical reasoning, reading of single words, and reading comprehension continued to be administered by the speech-language pathologist, with assistance by trained assistants. All tests were scored by the speech-language pathologist. The second matriculating class at KIPP Academy was given four of the six tests at the beginning of the fifth grade and at the end of the fifth, sixth, and seventh grades. Every student was tested, and all data were included in the final averaging.

Texas Assessment of Knowledge and Skills (TAKS). Between 1993 and 2002, all Texas public school students were required to take a standardized test called the Texas Assessment of Academic Skills (TAAS). Though improved performance on this test correlated with statewide improvement as measured by the National Assessment of Educational Progress (National Center for Education Statistics 2004), the TAAS could not distinguish those students who remained below acceptable levels of skills. The test was replaced by the more rigorous Texas Assessment of Knowledge and Skills (TAKS). The TAKS was given for the first time in the spring of 2003. All students enrolled in grades 5–7 in Texas public schools were to take the test, though many schools exempted students for various reasons. Every student enrolled in KIPP took the TAKS, without exception, and all data were included in the final analysis.

Statistics. Individual results were averaged and mean data were presented together with the standard error of the mean. The comparison of data used Student's t-test (a standard statistical tool for comparing results) statistics or, when appropriate, repeated measures analysis of variance so that correlation of measurements over time could be taken into account. A *P*-value < 0.05 was considered statistically significant.

Results

WJ-R, First Matriculating Class. Testing done during the second month of fifth grade showed that the mean performance of students who entered the newly formed fifth grade at KIPP Academy was slightly below grade level (Table 1). Scores on tests of mathematical skills (calculation and word problems) and letter-word identification (single-word reading) were above grade level. Passage comprehension and writing (spelling and written expression) scores were below grade level. This disparity was anticipated for young persons who lived in a culture that did not use English as the primary language. This initial or baseline testing was conducted during the second month of the regular school year, after completion of the mandatory four-week summer session and the first month of regular classes; therefore, the apparent performance of incoming students was inflated slightly.

Table 1: First Matriculating KIPP Class—Yearly Performance on Six Components of the WJ-R Test*

	<u>Begin 5th</u> (n=59)	<u>End 5th</u> (n=58)	<u>End 6th</u> (n=47)	<u>End 7th</u> (n=37)
Mathematics				
Calculation	5.5 ± 0.6	7.1 ± 1.3	11.4 ± 3.4	14.0 ± 3.3
Applied (word) problems	5.4 ± 1.3	8.1 ± 1.8	11.2 ± 2.9	12.4 ± 2.3
Reading				
Letter-word identification	5.9 ± 1.9	7.5 ± 1.9	8.5 ± 1.8	10.5 ± 3.0
Passage comprehension	4.9 ± 1.5	7.1 ± 1.9	8.4 ± 2.5	10.0 ± 2.2
Writing				
Spelling from dictation	3.8 ± 1.2	4.9 ± 1.0	6.1 ± 2.9	6.2 ± 1.8
Written expression	4.2 ± 1.3	5.7 ± 1.7	6.4 ± 3.1	9.1 ± 3.0
Overall	4.95	6.72	8.67	10.34

* Tests were administered at the grade level noted at the top of each column. Results are presented as mean ± standard deviation of the mean.

In the ensuing three years, scores on each test improved at a rate that, on average, exceeded one year for each year in the program (Table 1; Figure 1). Mean performance on all six subtests reached a grade level of 10.34 by the time students completed seventh grade, an average increase of 1.8 years for each academic year. The greatest advances were seen in mathematical skills (both in calculation and word problems) and the least advances occurred in spelling. Average improvement was spread evenly over the three years studied, though improvement in one or another subject may have varied from year to year. For example, the greatest increase (7.1 to 11.4 or 61 percent) in calculation occurred in sixth grade, whereas the greatest improvement (5.4 to 8.1 or 50 percent) in mathematical word problems occurred in fifth grade. In written expression, the biggest increase (6.4 to 9.1 or 44 percent) occurred in seventh grade.

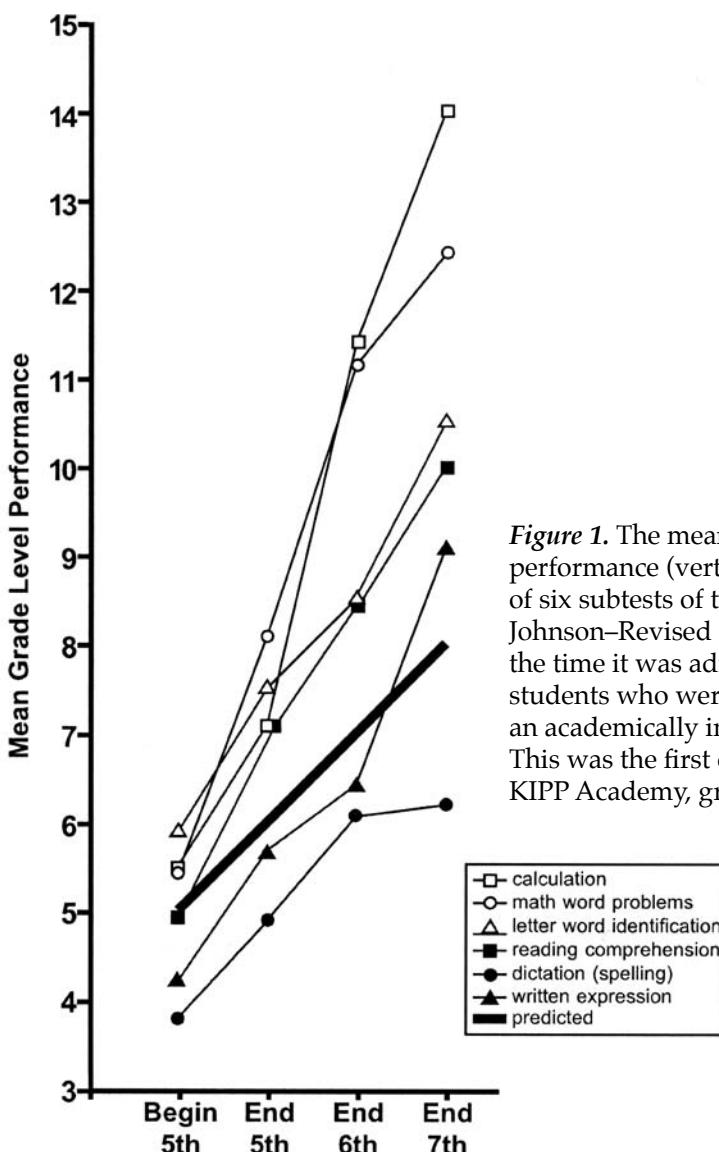


Figure 1. The mean grade-level performance (vertical axis) for each of six subtests of the Woodcock-Johnson-Revised test based on the time it was administered to students who were self-selected for an academically intense program. This was the first class to enter KIPP Academy, grades 5–7.

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WJ-R, Second Matriculating Class. To reduce the possibility of bias from testing only one group of students, the second fifth-grade class to enroll in KIPP was studied in the fall of 1996—after the mandatory four-week summer session—and again at the end of the fifth, sixth, and seventh grades. Only four of the six WJ-R subtests were administered; therefore, comparisons between the first and second classes were confined to scores on these four tests. As shown in Table 2 and Figure 2, mean baseline performance of the second class was below grade level (mean 4.51, range 3.7 to 5.5), compared to a mean of 4.59 (range 3.8 to 5.5) in the first class on these same four tests (difference not significant, $P>0.45$). Students in the second class performed less well at baseline in reading comprehension and better in spelling than the first class ($P<0.01$ for each comparison). Students in the second class also improved at an average rate that exceeded one grade level for each year in the program. The overall mean improvement in the second class—1.85 years for each year in the program—was similar to that of 1.75 years per year in the same four subjects for the first class ($P>0.3$). At the end of seventh grade, differences in mean performance on the four subtests were negligible (mean 10.05 vs. 9.83, respectively, $P>0.45$).

Table 2: Second Matriculating KIPP Class—Yearly Performance on Four Components of the WJ-R Test*

	<u>Begin 5th</u> (n=55)	<u>End 5th</u> (n=56)	<u>End 6th</u> (n=40)	<u>End 7th</u> (n=39)
<u>Mathematics</u>				
Arithmetic skills	5.5 ± 0.7	7.4 ± 1.1	12.8 ± 2.9	15.8 ± 1.9
<u>Reading</u>				
Comprehension	4.1 ± 1.4	5.5 ± 2.2	6.3 ± 2.4	8.0 ± 2.5
<u>Writing</u>				
Spelling	4.8 ± 0.9	5.7 ± 1.5	6.4 ± 1.6	8.8 ± 2.8
Written comprehension	3.7 ± 1.2	4.4 ± 1.2	7.4 ± 1.1	7.5 ± 2.9
Overall	4.51 (4.59) **	5.76 (6.18)	8.14 (8.07)	10.05 (9.83)

* Tests were administered at the grade level noted at the top of each column. Results are presented as mean ± standard deviation of the mean.

** Numbers in parentheses indicate the average of the scores of the first matriculating class in these four tests.

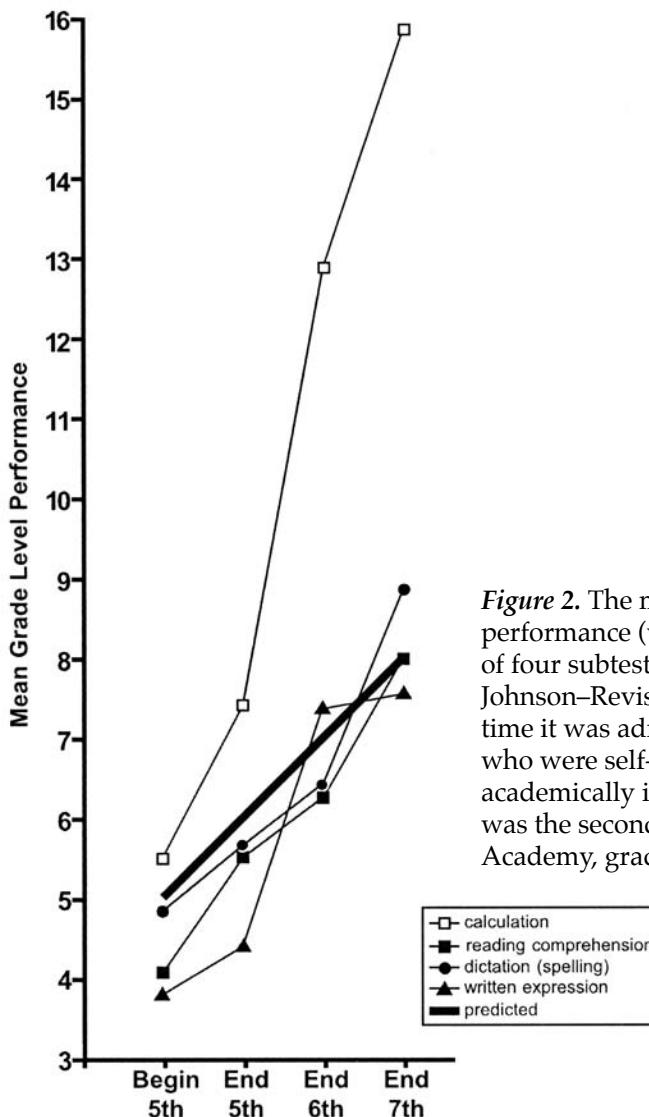


Figure 2. The mean grade-level performance (vertical axis) for each of four subtests of the Woodcock-Johnson-Revised test based on the time it was administered to students who were self-selected for an academically intense program. This was the second class to enter KIPP Academy, grades 5–7.

TAKS. The Texas Assessment of Knowledge and Skills (TAKS) was given for the first time in April 2003. As shown in Figure 3, 72 of 88 (82 percent) KIPP fifth graders met the standard (passed) in reading. Twelve (14 percent) of these students exceeded the standard (honors). Eighty-one percent of the students passed in mathematics, with 3 percent achieving honors. In addition, 59 (67 percent) students passed a science exam weighted toward earth science which is on the standard curriculum, but not taught at KIPP; there were no honors (Table 3). Among sixth graders, 85 of 87 (98 percent) students passed in reading, with 27 (31 percent) students receiving honors. In mathematics, 95 percent of the students passed, with 23 percent receiving honors. The pass rates in reading and mathematics for seventh graders were 98 and 99 percent, respectively, with 27 percent in each group achieving honors. A writing test also was administered to seventh graders. Seventy-nine of 84 students (94 percent) passed and 20 (24

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percent) achieved honors. One hundred percent of the eighth-grade students met standards in reading, mathematics, and social studies, with 40 percent, 16 percent, and 18 percent, respectively, achieving honors.

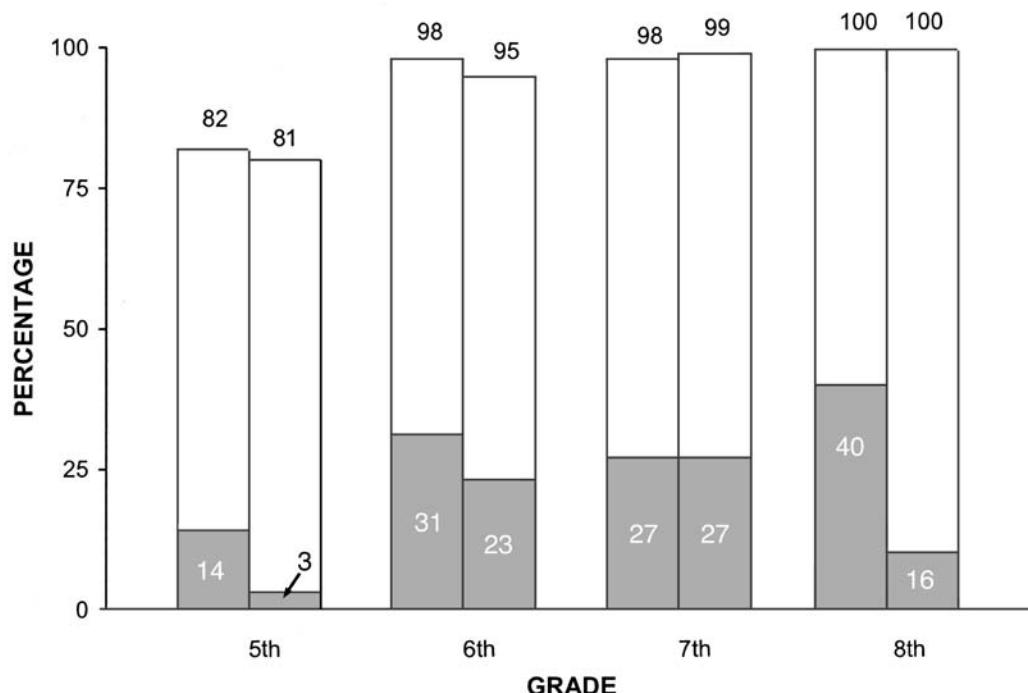


Figure 3. Percentages of students in each grade who passed the TAKS in reading (left-hand bar in each pair) and mathematics (right-hand bar in each pair). The percentages of students achieving honors are shown in the shaded part of each bar. These were the fifth through eighth classes to enter KIPP Academy.

Table 3: Academic Performance on TAKS, 2003*

Grade Level, Number of Students	Reading	Mathematics	Science	Writing	Social Studies
Fifth, n = 88	82 (14)	92 (3)	67 (0)		
Sixth, n = 87	98 (31)	95 (23)	—	—	—
Seventh, n = 84	98 (27)	99 (27)	—	94 (24)	—
Eighth, n = 68	100 (40)	100 (16)			100 (18)

*Percentages of students who achieved passing grade on indicated test. Numbers in parentheses indicate percentages of students with commended performance (honors).

Comparisons with results from five inner-city schools in Houston, the entire Houston Independent School District, and all Texas schools showed a high level of performance by KIPP students (Table 4).

Table 4: Proportion of Students with a Passing Grade on Individual Components of TAKS, First Administration, 2003*

<u>Grade Level, Number of Students</u>	<u>KIPP</u>	<u>HISD (Five Schools)**</u>	<u>All of HISD</u>	<u>State of Texas</u>
Fifth, n = 88	80.3	58.8	72.5	80
Sixth, n = 87	96.5	63.6	72.6	83
Seventh, n = 86	96.7	63.4	75.7	82
Eighth, n = 68	100.0	72.3	79.7	85

* Data shown indicate the mean percentage of students in each grade who achieved a passing grade on individual components of the Texas Assessment of Knowledge and Skills in spring 2003, the first time the examination was given. Percentages were calculated for each component test and then averaged. These students were not the same as those who were tested by the Woodcock-Johnson-Revised Test (Tables 1 and 2).

** HISD = Houston Independent School District; five schools in underserved areas of Houston that draw on a population similar to that in the KIPP Academy were selected for purposes of comparison.

Statistical analysis cannot be applied, but the overall pass rate (the proportion of students who passed individual components) by KIPP students rose dramatically after one year in the program, approached 100 percent in sixth and seventh grades, and reached 100 percent in eighth grade. Since TAKS is a criterion reference test, a more rigorous test of school-program adequacy might be the proportion of students who achieved a passing grade in all components (Table 5). KIPP was the only low-income neighborhood school in Texas at which 100 percent of the eighth-grade students passed all components of TAKS. By comparison, 57.9 percent of students at five comparable Houston public schools and 69.9 percent of all students in Texas achieved passing grades in all components of this test.

Table 5: Proportion of Students with a Passing Grade on All Components of TAKS, First Administration, 2003*

<u>Grade Level, Number of Students</u>	<u>KIPP</u>	<u>HISD (Five Schools)**</u>	<u>All of HISD</u>	<u>State of Texas</u>
Fifth, n = 88	63.6	41.2	54.7	65.9
Sixth, n = 87	93.0	50.5	60.7	74.8
Seventh, n = 86	97.0	43.5	54.3	67.7
Eighth, n = 68	100.0	57.9	59.1	69.9

* Data shown indicate percentage of students in each grade who achieved a grade of passing or better on all components of the TAKS in spring 2003, the first time the examination was given.

** HISD = Houston Independent School District; five inner city schools that draw on a population similar to that enrolled in the KIPP Academy were selected for purposes of comparison.

Discussion

Objective testing showed that the KIPP students in this study improved remarkably in academic performance during three years of observation. The validity is supported by analyzing the data in a number of ways. This was a prospective longitudinal study, in which the WJ-R was administered by or under the supervision of a single, experienced tester, thereby eliminating observer variability. Two classes were studied from the time of admission, thereby reducing the likelihood of a chance finding or that one particular set of teachers was responsible. Students served as their own controls; baseline testing soon after entry showed a mean performance below expected grade level, supporting the contention that students had been selected without regard to prior academic achievement.

During three years of observation, improvement occurred at a rate that exceeded one year for each year in the program for most subject areas and for most years. Improvement was cumulative and occurred in different areas at various stages of instruction, indicating that this was not simply a honeymoon effect traceable to the initial months or year of participation and that, to be valid, studies need to be done over an appropriate time duration. Finally, the robust nature of the testing results was reinforced by measured performance on the TAKS, an entirely different testing instrument, and in groups of students who had not been tested by the WJ-R. With any objective test, there is always the possibility that teachers are "teaching to the test," a possibility that was excluded by performance on the TAKS, since this test had not been administered previously.

Some attrition occurred among students during the three years of the study. If this attrition had occurred due to the loss of academically unsuccessful students, the apparent benefits of the program might have been artificially enhanced. However, enrollment in fifth grade remained stable in both classes and in the seventh and eighth grades in the second class. Improvement in performance during these individual years was similar to that observed in other years.

Results for students in both classes showed a trend for mean scores in calculation and applied mathematical problems to increase more rapidly than those in reading comprehension. This trend was not surprising. In the primarily Spanish-speaking families of KIPP Academy students, arithmetical calculations and word problems may have been reinforced by everyday activities. It is not likely, however, that skills in English usage were. Though enhanced reading skills may have facilitated performance on mathematical concepts tests, the reverse did not apply.

Crist, Jacquart, and Shupe (2002) reported on the absence of objective data and the potential importance of obtaining this type of data. Higher pass rates on standardized tests by students in programs such as KIPP suggest that these programs are successful; but results of prospectively administered standardized tests such as WJ-R with yearly follow-up studies have not, to our knowledge, been reported. By using the TAKS—a different and newly implemented testing instrument—the performance of KIPP Academy students could be compared with that of other students locally and statewide. This was the first time that TAKS was administered, obviating concern that results were biased by teaching toward the test. An exceptional level of performance was plainly visible. It should be noted that students who were tested by the TAKS were not the same as those tested by the WJ-R; students whose data are reported here had graduated from high school (the first class) or were seniors in high school (the second class).

The data from this study suggested that the benefits of an intense educational experience are cumulative and sustainable while students remain in the program. Anecdotal information, supported by objective test results, showed that alumni of this program continued to do well academically in public and private high school programs following completion of the KIPP middle-school program. Of the 44 students who completed eighth grade (the denominator includes some who entered sixth or seventh grade and were not, therefore, included in the WJ-R prospective testing), 39 (91 percent) finished high school, one is taking extension courses to complete a high school degree while playing professional soccer, and one died. Follow-up was not possible on three students, so it is uncertain whether they completed high school. Of the 39 students who completed high school, 34 (87 percent) entered college, and three other students applied and were accepted after a one-year hiatus. To persons familiar with the educational track record of underserved students, these numbers are remarkable.

The results of this study provide insight into important social and political questions. Thernstrom and Thernstrom (2003) emphasized the importance of testing as a way of documenting educational success. Yet, some authorities (Sacks 1999; Meier 2000) continue to emphasize the unfairness of testing, especially when nationally based norms are ap-

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plied to data obtained in an ethnic group. This study showed that providing an enriched educational experience can lead to remarkable improvement in scores on standardized tests, supporting the notion that tests can be used to document the educational success of the experience. Students raised in homes in which English is not the primary language entered KIPP with test scores below grade level. Three years later—without alteration in cultural milieu—mean scores were well above grade level. These results provided a factual basis for the federal district court ruling (*GI Forum v. Texas Education Agency* 2000) that the process of testing is not, in and of itself, discriminatory. Only when 100 percent of our young people successfully complete high school, are literate, and have the skills to perform in the workplace and live successfully in our complex society, can we have the luxury of examining the potential adverse effects of testing for achievement of minimal standards.

During three years of observation, improvement occurred at a rate that exceeded one year for each year in the program for most subject areas and for most years.

Great emphasis has been placed on achieving racial and ethnic balance in schools. At the time the data presented here were obtained, about 91 percent of the students at the KIPP Academy were from Hispanic families and 5 percent were from African-American families. Ninety-two percent of the students were on free or reduced-lunch programs. Though one way to effect change might be to create racial or socioeconomic balance, the data presented herein supported the

hypothesis outlined by Armor and Rossell (2002) that ethnic imbalance alone is not detrimental to the educational process.

The question of whether students from Hispanic families should be taught in Spanish because they may not master educational concepts—the basis for so-called bilingual education—is strongly opposed by the results of this study. High-quality education in English for students whose families do not speak English in their homes led to enormous academic progress as validated by objective tests. It is difficult to imagine that attendance at KIPP altered the linguistic and cultural environment in the home, though the possibility that the families that enrolled students in KIPP were more receptive to such alteration cannot be excluded. If there is any validity to the linguistic analysis of Farkas (1996), which purported to show that ethnic differences affect auditory processing skills, the results of this study indicated that such differences are readily overcome by an intense educational experience.

The sociopolitical issue of charter schools as a separate educational entity was not addressed in this study. Data from North Carolina have shown great variability in achievement by students in charter schools, with the suggestion that such students may be less likely than those in standard public schools to perform successfully on

standardized tests (Noblit and Corbett 2001). Studies of other charter school systems also have yielded negative or mixed results (Miron and Nelson 2001; Harrington-Lueker 2002; Hollenbeck and Eberts 2002; Bulkley and Fisler 2002). Other findings, however, defend individual charter schools or networks of charter schools (Anderson et al. 2002; Cross, Rebarber, and Wilson 2002; Brown and Roney 2003; Fitzgerald 2003). Earlier reports (Lezotte and Bancroft 1985; Sanders and Rivers 1998; TIMSS 1999), coupled with the results presented in this paper, indicate that individual, well-run schools that provide an intense educational experience with instruction by excellent teachers yield measurable educational advances, whether through standard public schools, charter schools, or private schools. The mixed results previously alluded to suggest that the converse applies—namely that inferior schools, regardless of setting, will perpetuate a poor educational outcome. An intense educational experience, with increased hours of instruction by excellent teachers, for committed students from invested families, can help to close—or even reverse—the educational gap within American society.

Objective test results showed that self-selected students from low-income, underserved families who are willing to commit themselves to an intense educational program are capable of remarkable academic advancement in a three-year period. Additional hours of instruction by excellent teachers, reinforced by parental desire for advancement, may be responsible for enhanced academic achievement, without regard to the particular administrative framework of the school.

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